

**PATENT COOPERATION TREATY**  
**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 14467-4	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/CA2005/000146</b>	International filing date ( <i>day/month/year</i> ) 04 February 2005 (04-02-2005)	Priority date ( <i>day/month/year</i> ) 05 February 2004 (05-02-2004)	
<p>International Patent Classification (IPC) or national classification and IPC  <b>IPC: A42B 3/04</b> (2006.01), <b>A63B 71/10</b> (2006.01), <b>A63B 69/00</b> (2006.01), <b>G08B 21/02</b> (2006.01),  <b>G01C 9/00</b> (2006.01)</p>			
<p>Applicant  <b>GGF SPORTS SOLUTIONS INC. ET AL</b></p>			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <b>7</b> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of sheets, as follows:</p> <p style="margin-left: 20px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 20px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. 1 and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand <b>05 December 2005 (05-12-2005)</b>	Date of completion of this report <b>13 June 2006 (13-06-2006)</b>		
Name and mailing address of the IPEA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476	Authorized officer  Eric Breton (819) 997-5209		

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**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on:
  - the international application in the language in which it was filed
  - a translation of the international application into translation furnished for the purposes of:
    - international search (Rules 12.3(a) and 23.1(b))
    - publication of the international application (Rule 12.4(a))
    - international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
  - the international application as originally filed/furnished
  - the description:
    - pages
    - pages\*
    - pages\*
  - the claims:
    - pages
    - pages\*
    - pages\*
    - pages\*
  - the drawings:
    - pages
    - pages\*
    - pages\*
  - a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**International application No.  
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1.  In response to the invitation to restrict or pay additional fees the applicant has, within the applicable time limit:
  - restricted the claims
  - paid additional fees
  - paid additional fees under protest and, where applicable, the protest fee
  - paid additional fees under protest but the applicable protest fee was not paid
  - neither restricted the claims nor paid additional fees.
2.  This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
  - complied with
  - not complied with for the following reasons:

**Group A:** Claims 1-14 are directed to an electronic safety device comprising a position sensor for sensing the position of the head of a user and providing a signal indicative of the head position, a processor connectable to the position sensor for receiving the indicative signal, for determining if the head is in an unsafe position and for producing a signal qualifying the determination and an indicator connectable to the processor for receiving the signal qualifying the determination and subsequently indicating, and a method for using such device;

**Group B:** Claims 15-18 are directed to a method for operating an electronic safety device comprising the steps of determining whether or not the device is in use and switching on or maintaining an active mode for the device if it is determined that the device is in use; and

**Group C:** Claims 19 and 20 are directed to a sport-specific helmet comprising a shell providing a main cavity, a layer of padding lining the inside of the main cavity, and an electronic device for determining and indicating that a head is in an unsafe position.

The claims must be limited to one invention only as set out in PCT Rule 13.

4. Consequently, this report has been established in respect of the following parts of the international application:

- all parts
- the parts relating to claims Nos.

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## Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	<u>8, 10, 12-14, 17 and 18</u>	YES
	Claims	<u>1-7, 9, 11, 15, 16, 19 and 20</u>	NO
Inventive step (IS)	Claims	<u>NONE</u>	YES
	Claims	<u>1-20</u>	NO
Industrial applicability (IA)	Claims	<u>1-20</u>	YES
	Claims	<u>NONE</u>	NO

## 2. Citations and explanations (Rule 70.7)

D1: US 6331168 B1 (CREATIVE SPORTS TECHNOLOGIES, INC.) 18 December 2001

D2: US 5916181 B1 (CREATIVE SPORTS TECHNOLOGIES, INC.) 29 June 1999

## Novelty (N)

Claims 1-7, 9 and 11 do not comply with **PCT Article 33(2)**. D1 and D2 disclosed the claimed subject matter before the claim date. D1 and D2 disclose an electronic safety device comprising a position sensor for sensing the position of the head of the wearer and providing a signal indicative of the sensed head position to a processor. The processor is programmed to determine if the head of the wearer has been in an unsafe position for a first continuous duration of time, and produces a signal qualifying the determination (see the example on Driver Alertness Aid in D1, column 15, lines 15-21, and in D2, column 13, lines 3-9). An indicator is also provided for receiving the signal from the processor and subsequently indicating the unsafe position.

Claims 15 and 16 do not comply with **PCT Article 33(2)**. D1 and D2 disclosed the claimed subject matter before the claim date. Both D1 and D2 disclose a method for operating an electronic safety device wherein it is determined whether or not the safety device is in use. If it is determined that the power switch is on and that the safety device has not been used for a predetermined period of time, the processor (30) will unlatch the power source (10) and go to "sleep" (see D1, column 4, lines 25-36, and D2, column 4, lines 14-25).

Claims 19 and 20 do not comply with **PCT Article 33(2)**. D1 and D2 disclosed the claimed subject matter before the claim date. Both D1 and D2 disclose a sport-specific helmet comprising a shell providing a main cavity adapted to fit around a human head, a layer of padding lining the inside of the main cavity of the shell and an electronic safety device for determining and indicating that the head of a user is in an unsafe position (see D1, column 3, lines 35-45 and column 10, line 66 to column 11, line 4; see also D2, column 3, lines 25-35 and column 10, lines 43-48).

## Inventive Step (IS)

Claim 8 does not comply with **PCT Article 33(3)**. The subject matter of that claim would have been obvious on the claim date to a person ordinary skilled in the art or science to which they pertain having regard to D1 and D2 in view of common knowledge. The use of photo-interrupter, piezo element and hall-effect switch is well known in the art and each element is considered as an obvious design choice.

[X] See Supplemental Box for further details

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Box No. VII      Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The abstract does not comply with **PCT Rule 8.1(d)**. Each technical feature mentioned in the abstract and illustrated by a drawing in the international application should be followed by a reference sign, placed between parentheses.

The International Searching Authority has discovered in the international application what appears to be a typographical error as specified hereafter:

- In the description, page 8, line 12, the expression "the threshold angel" should read "the threshold angle".

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**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 15 does not comply with **PCT Article 6**. The expression "according to" is ambiguous as it appears to define a dependent claim, but no reference is made to the claim upon which it depends.

The description does not comply with **PCT Article 5**. A statement in an application, such as found on page 1, paragraph 0001, which incorporates by reference any other document, does not fully describe the invention. The description shall be complete in and on itself. A person skilled in the art should be able to understand the patent specification without reference to any other document. Moreover, the aforementioned paragraph should be removed as it comprises a reference to a provisional application. The PCT does not provide for any reference to provisional applications.

The description does not comply with **PCT Article 5**. The description must disclose the invention sufficiently clear and complete. However, in page 10, line 14, the expression "device when it senses player motion" seems to be an incomplete sentence and therefore lacks clarity.

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: **Box No. V**

**Inventive Step (IS) (continuation)**

Claims 10 and 12-14 do not comply with **PCT Article 33(3)**. The subject matter of that claim would have been obvious on the claim date to a person ordinary skilled in the art or science to which they pertain having regard to D1 and D2 in view of common knowledge. The step of stopping or re-starting the sensing, determining and indicating after a second or third continuous duration of time is considered to be an obvious solution for solving the problem associated with the automatic activation or deactivation of the device.

Claims 17 and 18 do not comply with **PCT Article 33(3)**. The subject matter of these claims would have been obvious on the claim date to a person ordinary skilled in the art or science to which they pertain having regard to D1 and D2 in view of common knowledge. The alternate claimed methods of determining whether or not the electronic safety device is in use are considered to be design choices well known in the art.

**Industrial Applicability (IA)**

The subject matter of claims 1-20 is considered to be industrially applicable and thus fulfills the requirements of **PCT Article 33(4)**.